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Attn: Andrew T. Liechti  
(918) 294-5805

RESEARCH REPORT: RR 25678  
(CSI # 05090)

BASED UPON ICC-ES EVALUATION  
REPORT NO. ESR-2196

REEVALUATION DUE DATE:  
September 1, 2012  
Issued Date: August 1, 2010  
Code: 2008 LABC

**GENERAL APPROVAL** – Reevaluation - Hilti Kwik-Pro Self-Drilling Screws

**DETAILS**

Hilti Kwik-Pro Self-Drilling screw fasteners are approved when in compliance with the description, use, identification and findings of Evaluation Report No. ESR-2196, dated April 1, 2007, and corrected May 2007, of the ICC Evaluation Service, Incorporated. The report, in its entirety, is attached and made part of this general approval.

The parts of Evaluation Report No. ESR-2196 marked by the double asterisks are deleted by the Los Angeles City Building Department from this approval.

**The approval is subject to the following conditions:**

1. Fasteners are to be installed in accordance with the manufacturer's published installation instructions and this report. If there is a conflict between the manufacturer's published installation instructions and this report, this report governs.
2. The allowable loads are not to be increased when the fasteners are used to resist wind or seismic forces.
3. The utilization of the nominal strength values contained in this evaluation report, for the design of cold-formed steel diaphragms, is outside the scope of this report.

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Hilti, Inc.  
Re: Hilti Kwik-Pro Self-Drilling Screws

4. Drawings and calculations verifying compliance with this report and the 2008 Los Angeles Building Code must be submitted to the plan check engineer. The drawings and calculations are to be prepared by an engineer registered in the State of California

## **DISCUSSION**

The report is in compliance with 2008 City of Los Angeles Building Code.

The approval is based on tests.

This general approval of an equivalent alternate to the Code is only valid where an engineer and/or inspector of this Department has determined that all conditions of this approval have been met in the project in which it is to be used.

This general approval will remain effective provided the Evaluation Report is maintained valid and unrevised with the issuing organization. Any revisions to the report must be submitted to this Department, with appropriate fee, for review in order to continue the approval of the revised report.

Addressee to whom this Research Report is issued is responsible for providing copies of it, complete with any attachments indicated, to architects, engineers and builders using items approved herein in design or construction which must be approved by Department of Building and Safety Engineers and Inspectors.

The status of the referenced Report No. ESR-2196 dated April 1, 2007, and corrected May 2007, which is currently beyond its reexamination date is still valid. The validity of the evaluation report was verified with ICC.

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BG: bg  
RR25678/wp12  
R07/23/08  
5C2/2703

Attachment: ICC-ES Evaluation Report No. ESR-2196 (5 Pages)

**ICC Evaluation Service, Inc.**  
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**DIVISION: 05—METALS**  
**Section: 05090—Metal Fastenings**

**REPORT HOLDER:**

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**TULSA, OKLAHOMA 74146**  
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**EVALUATION SUBJECT:**

**HILTI KWIK-PRO SELF-DRILLING SCREWS**

**1.0 EVALUATION SCOPE**

**Compliance with the following codes:**

- 2006 *International Building Code*® (IBC)
- \*\*** ■ ~~1997 *Uniform Building Code*™ (UBC)~~

**Property evaluated:**

Structural

**2.0 USES**

The Hilti Kwik-Pro Self-drilling Screws are used to connect cold-formed steel members to cold-formed steel members.

**3.0 DESCRIPTION**

The Hilti Kwik-Pro Self-drilling Screws are self-drilling tapping screws complying with ASTM C 1513, and are case-hardened from carbon steel conforming to ASTM A 510, Grade 1022. The screws have a hex washer head and have an electroplated zinc coating complying with ASTM F 1941, or a proprietary coating. Table 1 provides screw designations, sizes and descriptions of point styles. Screws are supplied in boxes of individual screws, or in collated plastic strips.

**4.0 DESIGN AND INSTALLATION**

**4.1 Design:**

Allowable fastener loads using Allowable Stress Design (ASD) for pull-out, pull-over, and shear (bearing) capacity are provided in Tables 2, 3 and 5, respectively. Instructions on how to calculate Load Resistance Factor Design (LRFD) capacities are found in the footnotes of these tables. Table 4 presents the nominal and allowable fastener tension and shear strengths for the screws. For connections subject to tension, the least of the allowable pull-out, pullover, and tension fastener strength of screws found in Tables 2, 3, and 4, respectively, must be used for design. For connections subject to shear, the lesser of the allowable shear fastener strength and shear (bearing) found in Tables 4 and 5, respectively, must be used for design. Connections subject to

combined tension and shear loading must be designed in accordance with Section E4.5 of the AISI – NAS.

The values in the tables are based on a minimum spacing between the centers of fasteners of three times the diameter of the screw, and a minimum distance from the center of a fastener to the edge of any connected part as follows:

1. In jurisdictions adopting the IBC: 1.5 times the diameter of the screw. When the distance to the end of the connected part is parallel to the line of the applied force, the allowable shear fastener strength determined in accordance with Section E4.3.2 of Appendix A of the AISI – NAS must be considered.

- ~~2. In jurisdictions adopting the UBC: three times the diameter of the screw. If the connection is subjected to shear force in one direction only, the minimum edge distance must be 1.5 times the diameter of the screw in the direction perpendicular to the force.~~

Screw thread length and point style are to be selected on the basis of thickness of the fastened material and thickness of the supporting steel, respectively, in accordance with the manufacturer's published installation instructions.

**4.2 Installation:**

Installation of the Hilti Kwik-Pro Self-drilling Screws must be in accordance with the manufacturer's published installation instructions and this report. The manufacturer's published installation instructions are to be available at the jobsite at all times during installation.

The screws must be installed perpendicular to the work surface using a variable speed screw gun set to not exceed 2,500 rpm. The screw must penetrate through the supporting steel with a minimum of three threads protruding past the back side of the supporting steel.

**5.0 CONDITIONS OF USE**

The Hilti Kwik-Pro Self-drilling Screws described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1** Fasteners are to be installed in accordance with the manufacturer's published installation instructions and this report. If there is a conflict between the manufacturer's published installation instructions and this report, this report governs.
- 5.2** The allowable loads specified in Section 4.1 are not to be increased when the fasteners are used to resist wind or seismic forces.
- 5.3** The utilization of the nominal strength values contained in this evaluation report, for the design of cold-formed steel diaphragms, is outside the scope of this report.

**\*Corrected May 2007**

**ES REPORTS™** are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICC Evaluation Service, Inc., express or implied, as to any finding or other matter in this report, or as to any product covered by the report.



**5.4** Drawings and calculations verifying compliance with this report and the applicable code must be submitted to the code official for approval. The drawings and calculations are to be prepared by a registered design professional when required by the statutes of the jurisdiction in which the project is to be constructed.

## **6.0 EVIDENCE SUBMITTED**

Data in accordance with the ICC-ES Acceptance Criteria for Tapping Screw Fasteners (AC118), dated December 2006.

## **7.0 IDENTIFICATION**

Hilti Kwik-Pro Self-drilling Screws are marked with an "H" on the top of the heads, as shown in Figure 1. Packages of Hilti Self-drilling Screws are labeled with the report holder's name (Hilti, Inc.), the fastener type and size, and the evaluation report number (ESR-2196).

TABLE 1—HILTI KWIK-PRO SELF-DRILLING TAPPING SCREWS

Description	Designation	Nominal Diameter (in.)	Nominal Screw Length (in.)	Head Style <sup>1</sup>	Point (Number)	Coating <sup>2</sup>
S-MD 10-16 X 5/8 HWH #3	#10-16	0.190	5/8	HWH	3	Zinc
S-MD 10-16 X 3/4 HWH #3	#10-16	0.190	3/4	HWH	3	Zinc
S-MD 10-16 X 3/4 HHWH #3	#10-16	0.190	3/4	HHWH	3	Zinc
S-MD 10-16 X 1 HWH #3	#10-16	0.190	1	HWH	3	Zinc
S-MD 10-16 X 1-1/4 HWH #3	#10-16	0.190	1-1/4	HWH	3	Zinc
S-MD 10-16 X 1-1/2 HWH #3	#10-16	0.190	1-1/2	HWH	3	Zinc
S-MD 12-14X3/4 HWH #3	#12-14	0.216	3/4	HWH	3	Zinc
S-MD 12-14 X 1 HWH #3	#12-14	0.216	1	HWH	3	Zinc
S-MD 12-14 X 1 1/2 HWH #3	#12-14	0.216	1-1/2	HWH	3	Zinc
S-MD 12-14 X 2 HWH #3	#12-14	0.216	2	HWH	3	Zinc
S-MD 1/4-14 X 3/4 HWH #3	1/4-14	0.250	3/4	HWH	3	Zinc
S-MD 1/4-14 X 1 HWH #3	1/4-14	0.250	1	HWH	3	Zinc
S-MD 1/4-14 X 1-1/2 HWH #3	1/4-14	0.250	1-1/2	HWH	3	Zinc
S-MD 1/4-14 X 2 HWH #3	1/4-14	0.250	2	HWH	3	Zinc
S-MD 12-24 X 7/8 HWH #4	#12-24	0.216	7/8	HWH	4	Zinc
S-MD 12-24 X 1-1/4 HWH #4	#12-24	0.216	1-1/4	HWH	4	Zinc
S-MD 12-24 X 1-1/4 HWH #5	#12-24	0.216	1-1/4	HWH	5	Zinc
S-MD 12-24 X 1-1/4 HWH #5 Kwik Cote	#12-24	0.216	1-1/4	HWH	5	Kwik-Cote
S-MD 12-24 X 2 HWH #5 Kwik Cote	#12-24	0.216	2	HWH	5	Kwik-Cote
S-MD 12-24 X 3 HWH #5 Kwik Cote	#12-24	0.216	3	HWH	5	Kwik-Cote
S-MD 10-16 X 7/8 M HWH Collated	#10-16	0.190	7/8	HWH	1	Zinc
S-MD 12-14 X 1 M HWH Collated	#12-14	0.216	1	HWH	1	Zinc
S-MD 10-16 X 3/4 M HWH3 Collated	#10-16	0.190	3/4	HWH	3	Zinc
S-MD 12-24 X 7/8 M HWH4 Collated	#12-24	0.216	7/8	HWH	4	Zinc
S-MD 10-16 X 7/8 HWH Pilot Point	#10-16	0.190	7/8	HWH	1	Zinc
S-MD 12-14 X 1 HWH Stitch	#12-14	0.216	1	HWH	1	Zinc
S-MD 1/4-14 X 7/8 HWH Stitch Kwik Seal	1/4-14	0.250	7/8	HWH	1	Kwik-Cote
S-MD 8-18 X 1/2 HWH #2	#8-18	0.164	1/2	HWH	2	Zinc
S-MD 8-18 X 3/4 HWH #2	#8-18	0.164	3/4	HWH	2	Zinc
S-MD 10-16 X 1/2 HWH #2	#10-16	0.190	1/2	HWH	2	Zinc
S-MD 10-16 X 3/4 HWH #2	#10-16	0.190	3/4	HWH	2	Zinc
S-MD 10-16 X 1 HWH #2	#10-16	0.190	1	HWH	2	Zinc
S-MD 12-14 x 3/4 HWH #3 Kwik Seal	#12-14	0.216	3/4	HWH	3	Kwik-Cote
S-MD 12-14 x 1 HWH #3 Kwik Seal	#12-14	0.216	1	HWH	3	Kwik-Cote
S-MD 12-14 X 1-1/4 HWH #3 Kwik Seal	#12-14	0.216	1-1/4	HWH	3	Kwik-Cote
S-MD 12-14 X 1 -1/2 HWH #3 Kwik Seal	#12-14	0.216	1-1/2	HWH	3	Kwik-Cote
S-MD 12-14 X 2 HWH #3 Kwik Seal	#12-14	0.216	2	HWH	3	Kwik-Cote
S-MD 1/4-14 X 3/4 HWH #3 Kwik Seal	1/4-14	0.250	3/4	HWH	3	Kwik-Cote
S-MD 1/4-14 x 1 HWH #3 Kwik Seal	1/4-14	0.250	1	HWH	3	Kwik-Cote
S-MD 1/4-14 X 1-1/2 HWH #3 Kwik Seal	1/4-14	0.250	1-1/2	HWH	3	Kwik-Cote

For **SI**: 1 inch = 25.4 mm.<sup>1</sup>Head configuration abbreviations are as follows; HWH = Hex Washer Head. HHWH = High Hex Washer Head.<sup>2</sup>For coating, Zinc = ASTM F 1941; Kwik-Cote = Proprietary coating.

**TABLE 2—ALLOWABLE TENSILE PULL-OUT LOADS ( $P_{NOT}/\Omega$ ), pounds-force** <sup>1, 2, 3, 4, 5</sup>

Steel $F_u = 45$ ksi Applied Factor of Safety, $\Omega = 3.0$								
Screw Designation	Nominal Diameter (in.)	Design thickness of member not in contact with the screw head (in.)						
		0.036	0.048	0.060	0.075	0.090	0.105	0.135
#8-18	0.164	75	100	125	157	188	220	282
#10-16	0.190	87	116	145	182	218	254	327
#12-14, #12-24	0.216	99	132	165	207	248	289	373
1/4-14	0.250	115	153	191	239	287	333	430

For SI: 1 inch = 25.4 mm, 1 lbf = 4.4 N, 1 ksi = 6.89 MPa.

<sup>1</sup>For tension connections, the lower of the allowable pull-out, pullover, and tension fastener strength of screw found in Tables 2, 3, and 4, respectively must be used for design.

<sup>2</sup>ANSI/ASME standard screw diameters were used in the calculations and are listed in the tables.

<sup>3</sup>The allowable pull-out capacity for other member thicknesses can be determined by interpolating within the table.

<sup>4</sup>To calculate LRFD values, multiply values in table by the ASD safety factor of 3.0 and multiply again with the LRFD  $\Phi$  factor of 0.5.

<sup>5</sup>For  $F_u = 65$  ksi steel, multiply values by 1.44.

**TABLE 3—ALLOWABLE TENSILE PULL-OVER LOADS ( $P_{NOV}/\Omega$ ), pounds-force** <sup>1, 2, 3, 4, 5</sup>

Steel $F_u = 45$ ksi Applied Factor of Safety, $\Omega = 3.0$									
Screw Designation	Washer Head Diameter (in.)	Design thickness of member in contact with the screw head (in.)							
		0.030	0.036	0.048	0.060	0.075	0.090	0.105	0.135
#8-18	0.335	225	271	363	453	567	680	790	1020
#10-16	0.399	268	323	430	540	673	807	943	1210
#12-14, #12-24	0.415	279	337	447	560	700	840	980	1260
1/4-14	0.500	336	407	540	677	843	1010	1180	1520

For SI: 1 inch = 25.4 mm, 1 lbf = 4.4 N, 1 ksi = 6.89 MPa.

<sup>1</sup>For tension connections, the lower of the allowable pull-out, pullover, and tension fastener strength of screw found in Tables 2, 3, and 4, respectively must be used for design.

<sup>2</sup>ANSI/ASME standard screw head diameters were used in the calculations and are listed in the tables.

<sup>3</sup>The allowable pull-over capacity for other member thicknesses can be determined by interpolating within the table.

<sup>4</sup>To calculate LRFD values, multiply values in table by the ASD safety factor of 3.0 and multiply again with the LRFD  $\Phi$  factor of 0.5.

<sup>5</sup>For  $F_u = 65$  ksi steel, multiply values by 1.44.

**TABLE 4—FASTENER STRENGTH OF SCREW**

Screw Designation	Diameter (in.)	Allowable Fastener Strength <sup>4</sup>		Nominal Fastener Strength (tested)	
		Tension ( $P_{ts}/\Omega$ ) <sup>1</sup> (lb)	Shear ( $P_{ss}/\Omega$ ) <sup>2,3</sup> (lb)	Tension, $P_{ts}$ (lb)	Shear, $P_{ss}$ (lb)
#8-18	0.164	335	390	1000	1170
#10-16	0.190	455	405	1370	1215
#12-14	0.216	775	625	2325	1880
#12-24	0.216	1300	760	3900	2285
1/4-14	0.250	1525	815	4580	2440

For SI: 1 inch = 25.4 mm, 1 lbf = 4.4 N, 1 ksi = 6.89 MPa.

<sup>1</sup>For tension connections, the lower of the allowable pull-out, pullover, and tension fastener strength of screw found in Tables 2, 3, and 4, respectively must be used for design.

<sup>2</sup>For shear connections, the lower of the allowable shear fastener strength and allowable shear (bearing) found in Tables 4 and 5, respectively must be used for design.

<sup>3</sup>See Section 4.1 for fastener spacing and end distance requirements.

<sup>4</sup>To calculate LRFD values, multiply the allowable fastener strengths by the ASD safety factor of 3.0 and multiply again by the LRFD  $\Phi$  factor of 0.5.

**TABLE 5—ALLOWABLE SHEAR (BEARING) CAPACITY OF COLD-FORMED STEEL, lb** <sup>1, 2, 3, 4, 5</sup>

Steel $F_u = 45$ ksi Applied Factor of Safety, $\Omega = 3.0$									
Screw Designation	Diameter (in.)	Design thickness of member in contact with screw head, (in.)	Design thickness of member not in contact with the screw head (in.)						
			0.036	0.048	0.060	0.075	0.090	0.105	0.135
#8	0.164	0.036	174	239	239	239	239	239	239
		0.048	174	268	319	319	319	319	319
		0.060	174	268	373	400	400	400	400
		0.075	174	268	373	497	497	497	497
		0.090	174	268	373	497	597	597	597
		0.105	174	268	373	497	597	697	697
		0.135	174	268	373	497	597	697	897
#10	0.190	0.036	188	277	277	277	277	277	277
		0.048	188	289	370	370	370	370	370
		0.060	188	289	403	463	463	463	463
		0.075	188	289	403	563	577	577	577
		0.090	188	289	403	563	693	693	693
		0.105	188	289	403	563	693	807	807
		0.135	188	289	403	563	693	807	1040
#12	0.216	0.036	200	309	315	315	315	315	315
		0.048	200	308	420	420	420	420	420
		0.060	200	308	430	523	523	523	523
		0.075	200	308	430	600	657	657	657
		0.090	200	308	430	600	787	787	787
		0.105	200	308	430	600	787	920	920
		0.135	200	308	430	600	787	920	1180
1/4 in.	0.250	0.036	215	340	363	363	363	363	363
		0.048	215	331	467	487	487	487	487
		0.060	215	331	463	607	607	607	607
		0.075	215	331	463	647	760	760	760
		0.090	215	331	463	647	850	910	910
		0.105	215	331	463	647	850	1060	1060
		0.135	215	331	463	647	850	1060	1370

For SI: 1 inch = 25.4 mm, 1 lbf = 4.4 N, 1 ksi = 6.89 MPa.

<sup>1</sup>The lower of the allowable shear fastener strength and shear bearing found in Tables 4 and 5, respectively must be used for design.

<sup>2</sup>ANSI/ASME standard screw diameters were used in the calculations and are listed in the tables

<sup>3</sup>The allowable bearing capacity for other member thicknesses can be determined by interpolating within the table.

<sup>4</sup>To calculate LRFD values, multiply values in table by the ASD safety factor of 3.0 and multiply again with the LRFD  $\Phi$  factor of 0.5.

<sup>5</sup>For  $F_u = 65$  ksi steel, multiply values by 1.44.

**FIGURE 1—HILTI HEX WASHER HEAD SELF-DRILLING SCREW**

## Self-Drilling Screws 3.6.2

### 3.6.2.1 Product Description

The Hilti Self-Drilling Screws are designed to drill their own hole in steel base materials up to 1/2" thick. These screws are available in a variety of head styles, thread lengths and drill-flute lengths for screw diameters #6 through 1/4". Hilti self-drilling screws meet ASTM C 1513, ASTM C 954 and SAE J78 standards, as applicable.

#### Product Features

- Hex head for metal-to-metal applications
- Flush head for wood-to-metal applications
- For metal from 0.035" to 0.500" thick
- Winged reamers for wood over 1/2" thick
- Stitch screws for light gauge metal-to-metal
- Sealing screws for water resistant fastenings

#### 3.6.2.1 Product Description

#### 3.6.2.2 Material Specifications

#### 3.6.2.3 Technical Data

#### 3.6.2.4 Installation Instructions

#### 3.6.2.5 Ordering Information



### 3.6.2.2 Material Specifications

<b>Material</b>	ASTM A 510 Grade 1018-1022
<b>Heat Treatment</b>	Case hardened and tempered <ul style="list-style-type: none"> <li>• Sizes 8, 10 and 12: 0.004" to 0.009" case depth</li> <li>• Size 1/4": 0.005" to 0.011" case depth</li> </ul>
<b>Plating</b>	<ul style="list-style-type: none"> <li>• Wood decking screws: Black Phosphate (8-18 x 1-5/16" PFH #3 and 8-18 x 1-15/16" and 5/16" PFH #3)</li> <li>• Kwik-Cote and Kwik-Seal screws: 0.0007" to 0.0015" Kwik-Cote Treatment</li> </ul> <p>Note: Due to environmental considerations, Hilti does not plate with cadmium.</p> <ul style="list-style-type: none"> <li>• Most Hilti zinc plated screws conform to ASTM F 1941 (which replaces ASTM B 633), as tested in accordance with ASTM B 117. The minimum zinc thickness is 5 microns. Refer to Section 3.6.2.5 for screw coating information.</li> </ul>
<b>Kwik-Cote Treatment</b>	Kwik-Cote is a unique copolymer coating that provides greater corrosion resistance than zinc or cadmium plating.

#### Listings/Approvals

**ICC-ES (International Code Council)**  
ESR-2196

**COLA (City of Los Angeles)**  
RR 25678



ICC-ES ESR-2196, provides IBC 2006/2009 recognition of Hilti's Self-Drilling Screw fasteners for most common applications (e.g. CFS connections, gypsum to CFS, etc.), including HWH, PPH, PBH, PWH, PPCH, PFUCH and PFTH head style screws.

### 3.6.2.3 Technical Data

#### Ultimate Tensile Strengths – Pullout (Tension), lb (kN)<sup>1,2,3,4,5,6,7</sup>

Screw Designation	Nominal Diameter in.	Thickness of steel member not in contact with the screw head, GA (in.)					
		20 (0.036)	18 (0.048)	16 (0.060)	14 (0.075)	12 (0.105)	10 (0.135)
#6	0.138	190 (0.85)	250 (1.11)	320 (1.42)	395 (1.76)	555 (2.47)	715 (3.18)
#7	0.151	210 (0.93)	275 (1.22)	345 (1.53)	435 (1.93)	605 (2.69)	780 (3.47)
#8	0.164	225 (1.00)	300 (1.33)	375 (1.67)	470 (2.09)	660 (2.94)	845 (3.76)
#10	0.190	260 (1.16)	350 (1.56)	435 (1.93)	545 (2.42)	765 (3.40)	980 (4.36)
#12	0.216	295 (1.31)	395 (1.76)	495 (2.20)	620 (2.76)	870 (3.87)	1120 (4.98)
1/4 in.	0.250	345 (1.53)	460 (2.05)	575 (2.56)	715 (3.18)	1000 (4.45)	1290 (5.74)

- 1 The lower of the ultimate pull-out, pullover, and tension fastener strength of screw should be used for design.
- 2 Load values based upon calculations done in accordance with Section E4 of the AISI North American Specification for the Design of Cold-Formed Steel Structural Members (NASPEC) 2007 edition.
- 3 The NASPEC recommends a safety factor of 3.0 be applied for allowable strength design, a  $\Phi$  factor of 0.5 be applied for LRFD design or a  $\Phi$  factor of 0.4 be applied for LSD design.
- 4 ANSI/ASME standard screw diameters were used in the calculations and are listed in the tables.
- 5 The screw diameters in the table above are available in head styles of pan, hex washer, pancake, flat, wafer and bugle.
- 6 The load data in the table is based upon sheet steel with  $F_u = 45$  ksi. For  $F_u = 55$  ksi steel, multiply values by 1.22. For  $F_u = 65$  ksi steel, multiply values by 1.44.
- 7 Refer to Section 3.6.2.5 to ensure drilling capacities.



## 3.6.2 Self-Drilling Screws

### Ultimate Tensile Strengths – Pullover (Tension), lb (kN)<sup>1,2,3,4,5,6,7</sup>

Screw Designation	Washer or Head Diameter in.	Thickness of steel member in contact with the screw head, GA (in.)						
		22 (0.030)	20 (0.036)	18 (0.048)	16 (0.060)	14 (0.075)	12 (0.105)	10 (0.135)
Hex Washer Head (HWH)								
#8	0.335	675 (3.00)	815 (3.63)	1000 (4.45)	1000 (4.45)	1000 (4.45)	1000 (4.45)	1000 (4.45)
#10	0.399	805 (3.58)	970 (4.31)	1290 (5.74)	1370 (6.09)	1370 (6.09)	1370 (6.09)	1370 (6.09)
#12-14	0.415	835 (3.71)	1010 (4.49)	1340 (5.96)	1680 (7.47)	2100 (9.34)	2325 (10.34)	2325 (10.34)
#12-24	0.415	835 (3.71)	1010 (4.49)	1340 (5.96)	1680 (7.47)	2100 (9.34)	2940 (13.08)	3780 (16.81)
1/4 in.	0.500	1010 (4.49)	1220 (5.43)	1620 (7.21)	2030 (9.03)	2530 (11.25)	3540 (13.75)	4560 (20.28)
Phillips Pan Head (PPH)								
#7	0.303	615 (2.74)	735 (3.27)	980 (4.36)	1000 (4.45)	1000 (4.45)	1000 (4.45)	1000 (4.45)
#8	0.311	630 (2.80)	755 (3.36)	1000 (4.45)	1000 (4.45)	1000 (4.45)	1000 (4.45)	1000 (4.45)
#10	0.364	740 (3.29)	885 (3.94)	1180 (5.25)	1370 (6.09)	1370 (6.09)	1370 (6.09)	1370 (6.09)
Phillips Truss Head (PTH)								
#8	0.433	875 (3.89)	1000 (4.45)	1000 (4.45)	1000 (4.45)	1000 (4.45)	1000 (4.45)	1000 (4.45)
#10	0.411	830 (3.69)	1000 (4.45)	1330 (5.92)	1390 (6.18)	1390 (6.18)	1390 (6.18)	1390 (6.18)
Phillips Pancake Head (PPCH)								
#10	0.409	830 (3.69)	995 (4.43)	1325 (5.89)	1370 (6.09)	1370 (6.09)	1370 (6.09)	1370 (6.09)
Phillips Flat Truss Head (PFTH)								
#10	0.364	740 (3.29)	885 (3.94)	1180 (5.25)	1475 (6.56)	1840 (8.18)	2170 (9.65)	2170 (9.65)

1. The lower of the ultimate pull-out, pullover, and tension fastener strength of screw should be used for design.
2. Load values based upon calculations done in accordance with Section E4 of the AISI North American Specification for the Design of Cold-Formed Steel Structural Members (NASPEC) 2007 edition.
3. The NASPEC recommends a safety factor of 3.0 be applied for allowable strength design, a  $\Phi$  factor of 0.5 be applied for LRFD design or a  $\Phi$  factor of 0.4 be applied for LSD design.
4. ANSI/ASME standard screw head diameters were used in the calculations and are listed in the tables.
5. Phillips Bugle Head (PBH) and Phillips Wafer Head (PWH) styles are not covered by this table because they are not intended for attachment of steel to steel.
6. The load data in the table is based upon sheet steel with  $F_u = 45$  ksi. For  $F_u = 55$  ksi steel, multiply values by 1.22. For  $F_u = 65$  ksi steel, multiply values by 1.44.
7. Refer to Section 3.6.2.5 for drilling capacities.

### Nominal Ultimate Fastener Strength of Screw

Screw Designation	Nominal Diameter (in.)	Nominal Fastener Strength	
		Tension, $P_{ts}$ lb (kN) <sup>1</sup>	Shear, $P_{ss}$ lb (kN) <sup>2,3,4</sup>
#6-20	0.138	1000 (4.45)	890 (3.96)
#7-18	0.151	1000 (4.45)	890 (3.96)
#8-18	0.164	1000 (4.45)	1170 (5.20)
#10-12	0.190	2170 (9.65)	1645 (7.32)
#10-16	0.190	1370 (6.09)	1215 (5.40)
#10-18	0.190	1390 (6.18)	1645 (7.32)
#12-14	0.216	2325 (10.34)	1880 (8.36)
#12-24	0.216	3900 (17.35)	2285 (10.16)
1/4 in.	0.250	4580 (20.37)	2440 (10.85)

- 1 The lower of the ultimate pull-out, pullover, and tension fastener strength of screw should be used for design.
- 2 The lower of the ultimate shear fastener strength and shear bearing should be used for design.
- 3 The NASPEC recommends a safety factor of 3.0 be applied for allowable strength design, a  $\Phi$  factor of 0.5 be applied for LRFD design or a  $\Phi$  factor of 0.4 be applied for LSD design.
- 4 When the distance to the end of the connected part is parallel to the line of the applied force the allowable shear fastener strength must be reduced for end distance, when necessary, in accordance with E4.3.2 of Appendix A of the AISI North American Specifications for the Design of Cold Formed Steel Structural Members (NASPEC) 2007 edition.

### Torsional Strength –

Screw Only. Does Not Consider Base Material Limitations

Size	Min. Torsional Strength in-lb (Nm)	
6-20	24	(2.7)
7-18	38	(4.3)
8-18	42	(4.8)
10-12	61	(6.9)
10-16	61	(6.9)
10-18	61	(6.9)
10-24	65	(7.3)
12-14	92	(10.4)
12-24	100	(11.3)
1/4-14	150	(17.0)
1/4-20	156	(17.6)

# Self-Drilling Screws 3.6.2

## Ultimate Shear Strengths – Bearing (Shear), lb (kN)<sup>1,2,3,4,5,6,7</sup>

Screw Designation	Nominal Diameter in.	Thickness of steel member in contact with screw head GA (in.)	Thickness of steel member not in contact with the screw head, GA (in.)				
			20 (0.036)	18 (0.048)	16 (0.060)	14 (0.075)	≥ 12 (0.105)
#7	0.151	20 (0.036)	500 (2.22)	660 (2.94)	660 (2.94)	660 (2.94)	660 (2.94)
		18 (0.048)	500 (2.22)	660 (2.94)	880 (3.91)	880 (3.91)	880 (3.91)
		≥ 16 (0.060)	500 (2.22)	660 (2.94)	890 (3.96)	890 (3.96)	890 (3.96)
#8	0.164	20 (0.036)	525 (2.34)	715 (3.18)	715 (3.18)	715 (3.18)	715 (3.18)
		18 (0.048)	525 (2.34)	805 (3.58)	955 (4.25)	955 (4.25)	955 (4.25)
		≥ 16 (0.060)	525 (2.34)	805 (3.58)	1120 (4.98)	1170 (5.20)	1170 (5.20)
#10-12	0.190	20 (0.036)	565 (2.51)	830 (3.69)	830 (3.69)	830 (3.69)	830 (3.69)
		18 (0.048)	565 (2.51)	865 (3.85)	1110 (4.94)	1110 (4.94)	1110 (4.94)
		16 (0.060)	565 (2.51)	865 (3.85)	1210 (5.38)	1390 (6.18)	1390 (6.18)
		≥ 14 (0.075)	565 (2.51)	865 (3.85)	1210 (5.38)	1645 (7.32)	1645 (7.32)
#10-16	0.190	20 (0.036)	565 (2.51)	830 (3.69)	830 (3.69)	830 (3.69)	830 (3.69)
		18 (0.048)	565 (2.51)	865 (3.85)	1110 (4.94)	1110 (4.94)	1110 (4.94)
		≥ 16 (0.060)	565 (2.51)	865 (3.85)	1210 (5.38)	1215 (5.40)	1215 (5.40)
#10-18	0.190	20 (0.036)	565 (2.51)	830 (3.69)	830 (3.69)	830 (3.69)	830 (3.69)
		18 (0.048)	565 (2.51)	865 (3.85)	1110 (4.94)	1110 (4.94)	1110 (4.94)
		16 (0.060)	565 (2.51)	865 (3.85)	1210 (5.38)	1390 (6.18)	1390 (6.18)
		≥ 14 (0.075)	565 (2.51)	865 (3.85)	1210 (5.38)	1645 (7.32)	1645 (7.32)
#12-14	0.216	20 (0.036)	600 (2.67)	930 (4.14)	945 (4.20)	945 (4.20)	945 (4.20)
		18 (0.048)	600 (2.67)	925 (4.11)	1260 (5.60)	1260 (5.60)	1260 (5.60)
		16 (0.060)	600 (2.67)	925 (4.11)	1290 (5.74)	1570 (6.98)	1570 (6.98)
		≥ 14 (0.075)	600 (2.67)	925 (4.11)	1290 (5.74)	1800 (8.00)	1880 (8.36)
#12-24	0.216	20 (0.036)	600 (2.67)	930 (4.14)	945 (4.20)	945 (4.20)	945 (4.20)
		18 (0.048)	600 (2.67)	925 (4.11)	1260 (5.60)	1260 (5.60)	1260 (5.60)
		16 (0.060)	600 (2.67)	925 (4.11)	1290 (5.74)	1570 (6.98)	1570 (6.98)
		14 (0.075)	600 (2.67)	925 (4.11)	1290 (5.74)	1800 (8.00)	1970 (8.76)
		≥ 12 (0.090)	600 (2.67)	925 (4.11)	1290 (5.74)	1800 (8.00)	2285 (10.16)
1/4 in.	0.250	20 (0.036)	645 (2.87)	1020 (4.54)	1090 (4.85)	1090 (4.85)	1090 (4.85)
		18 (0.048)	645 (2.87)	995 (4.43)	1400 (6.23)	1460 (6.49)	1460 (6.49)
		16 (0.060)	645 (2.87)	995 (4.43)	1390 (6.18)	1820 (8.10)	1820 (8.10)
		14 (0.075)	645 (2.87)	995 (4.43)	1390 (6.18)	1940 (8.63)	2280 (10.14)
		≥ 12 (0.090)	645 (2.87)	995 (4.43)	1390 (6.18)	1940 (8.63)	2440 (10.85)

- 1 The lower of the ultimate shear bearing and shear fastener strength of screw should be used for design.
- 2 Load values based upon calculations done in accordance with Section E4 of the AISI North American Specification for the Design of Cold-Formed Steel Structural Members (NASPEC) 2007 edition. It is assumed that the steel sheets are tight together with no gaps.
- 3 The NASPEC recommends a safety factor of 3.0 be applied for allowable strength design, a  $\Phi$  factor of 0.5 be applied for LRFD design or a  $\Phi$  factor of 0.4 be applied for LSD design.
- 4 ANSI/ASME standard screw head diameters were used in the calculations and are listed in the tables.
- 5 Load values in table are for Hex Washer Head (HWH and HHWH), Phillips Pan Head (PPH), Phillips Truss Head (PTH), Phillips Pancake Head (PPCH), and Phillips Flat Truss Head (PFTH) style screws. Phillips Bugle Head (PBH) and Phillips Wafer Head (PWH) styles are not covered by this table because they are not intended for attachment of steel to steel.
- 6 The load data in the table is based upon sheet steel with  $F_u = 45$  ksi. For  $F_u = 55$  ksi steel, multiply values by 1.22. For  $F_u = 65$  ksi steel, multiply values by 1.44.
- 7 Refer to Section 3.6.2.5 to ensure drilling capacities.

### 3.6.2.4 Installation Instructions

For general discussion of Hilti screw fastener installation, reference Section 3.6.1.7.

For allowable diaphragm shear loads and stiffness values for steel roof or floor deck utilizing Hilti self-drilling screws as frame or sidelap fasteners, reference Section 3.5 and

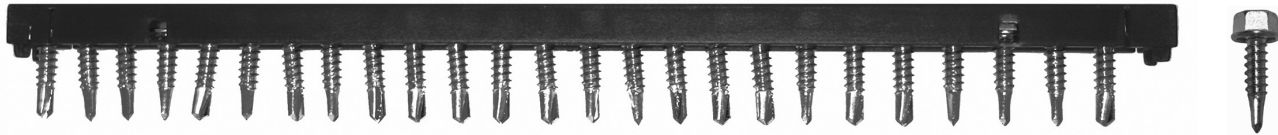
download Hilti's Profis DF software at [www.us.hilti.com/decking](http://www.us.hilti.com/decking) (US), or [www.hilti.ca](http://www.hilti.ca) (Canada).

To estimate the number of sidelap screws on a steel roof or floor deck project, reference Section 3.5.1.6.

**Warning:** Because of the potential for delayed hydrogen assisted stress corrosion cracking, many hardened steel fasteners are not recommended for use with dissimilar metals or chemically treated wood when moisture may be present or in corrosive environments. For further information, contact Hilti Technical Support at 1-877-749-6337.

## 3.6.2 Self-Drilling Screws

### 3.6.2.5 Ordering Information



#### Collated Self-Drilling Screws

##### Light/Medium Gauge Metal Applications (Sidelap)

Description	Thread Length	Drilling Capacity		Maximum Total Thickness (MT) <sup>1</sup>		Recess	Coating <sup>2</sup>	Box Qty
		Min	Max					
S-MD 10-16 x 7/8 HWH Collated	3/8"	0.028"	0.120"	3/16"	0.188"	5/16"	Zinc-1	250
S-MD 12-14 x 1 HWH Collated	3/4"	0.028"	0.120"	3/8"	0.375"	5/16"	Zinc-1	250

##### Medium/Heavy Gauge Metal Applications (Frame Fastener)

Description	Thread Length	Drilling Capacity		Maximum Total Thickness (MT) <sup>1</sup>		Recess	Coating <sup>2</sup>	Box Qty
		Min	Max					
S-MD 10-16 x 3/4 HWH#3 Collated	1/2"	0.110"	0.175"	3/8"	0.375"	5/16"	Zinc-1	250
S-MD 12-24 x 7/8 HWH#4 Collated	1/2"	0.175"	0.312"	3/8"	0.375"	5/16"	Zinc-1	250

1 Refer to Figure in Section 3.6.1.5.

2 For coating abbreviations, Zinc-1 = ASTM F 1941. For more information on corrosion resistance, reference Section 3.6.1.6.



#### Single Self-Drilling Screws

##### Sidelap (unsupported metal sheets)

Description	Thread Length	Drilling Capacity		Maximum Total Thickness (MT) <sup>1</sup>		Recess	Coating <sup>2</sup>	Box Qty
		Min	Max					
S-MD 12-14x1 HHWH Stitch	3/4"	0.028"	0.120"	3/8"	0.375"	5/16"	Zinc-1	3000
S-MD 10-16x7/8 HHWH Pilot Point	3/8"	0.028"	0.120"	3/16"	0.188"	5/16"	Zinc-1	6000
S-MD 1/4-14x7/8 HWH Stitch Kwik-Seal	1/2"	0.028"	0.140"	5/16"	0.313"	5/16"	Kwik-Cote	2500

1 Refer to Figure in Section 3.6.1.5.

2 For coating abbreviations, Zinc-1 = ASTM F 1941; Kwik Cote = Proprietary Coating, Section 3.6.2.2 For more information on corrosion resistance, reference Section 3.6.1.6.

# Self-Drilling Screws 3.6.2

## Light Gauge Applications: Steel to Steel

Description	Thread Length	Drilling Capacity		Maximum Total Thickness (MT) <sup>1</sup>		Recess	Coating <sup>2</sup>	Box Qty
		Min	Max					
S-MD 8-18x1/2 HWH #2	1/4"	0.035"	0.100"	1/8"	0.125"	1/4"	Zinc-1	1000
S-MD 8-18x3/4 HWH #2	1/2"	0.035"	0.100"	3/8"	0.375"	1/4"	Zinc-1	1000
S-MD 8-18x1/2 PPH #2	1/4"	0.035"	0.100"	1/8"	0.125"	PHL #2	Zinc-1	1000
S-MD 10-16x1/2 HWH #2	5/16"	0.035"	0.110"	3/16"	0.188"	5/16"	Zinc-1	8500
S-MD 10-16x3/4 HWH #2	1/2"	0.035"	0.110"	5/16"	0.313"	5/16"	Zinc-1	6500
S-MD 10-16x1 HWH #2	3/4"	0.035"	0.110"	1/2"	0.500"	5/16"	Zinc-1	5000

1 Refer to Figure in Section 3.6.1.5.

2 For coating abbreviations, Zinc-1 = ASTM F 1941. For more information on corrosion resistance, reference Section 3.6.1.6.

## Light / Medium Gauge Metal Applications

Description	Thread Length	Drilling Capacity		Maximum Total Thickness (MT) <sup>1</sup>		Recess	Coating <sup>2</sup>	Box Qty
		Min	Max					
S-MD 10-16x5/8 HWH #3	5/16"	0.110"	0.175"	3/16"	0.187"	5/16"	Zinc-1	7500
S-MD 10-16x3/4 HWH #3	1/2"	0.110"	0.175"	3/8"	0.375"	5/16"	Zinc-1	6500
S-MD 10-16x3/4 HHWH #3	1/2"	0.110"	0.175"	3/8"	0.375"	5/16"	Zinc-1	6500
S-MD 10-16x1 HWH #3	3/4"	0.110"	0.175"	5/8"	0.625"	5/16"	Zinc-1	5000
S-MD 10-16x1 1/4 HWH #3	1"	0.110"	0.175"	7/8"	0.875"	5/16"	Zinc-1	4000
S-MD 10-16x1 1/2 HWH #3	1-1/4"	0.110"	0.175"	1-1/8"	1.125"	5/16"	Zinc-1	4000
S-MD 10-16x5/8 PPH #3	5/16"	0.110"	0.175"	5/16"	0.313"	PHL #2	Zinc-1	7500
S-MD 10-16x3/4 PPH #3	1/2"	0.110"	0.175"	3/8"	0.375"	PHL #2	Zinc-1	6500
S-MD 12-14x3/4 HWH #3	1/2"	0.110"	0.210"	5/16"	0.313"	5/16"	Zinc-1	5000
S-MD 12-14x1 HWH #3	3/4"	0.110"	0.210"	9/16"	0.562"	5/16"	Zinc-1	3000
S-MD 12-14x1 1/2 HWH #3	1-1/4"	0.110"	0.210"	1-1/16"	1.062"	5/16"	Zinc-1	2500
S-MD 12-14x2 HWH #3	1-5/8"	0.110"	0.210"	1-9/16"	1.562"	5/16"	Zinc-1	2000
S-MD 1/4-14x3/4 HWH #3	1/2"	0.110"	0.220"	5/16"	0.313"	3/8"	Zinc-1	4000
S-MD 1/4-14x1 HWH #3	3/4"	0.110"	0.220"	9/16"	0.562"	3/8"	Zinc-1	3000
S-MD 1/4-14x1 1/2 HWH #3	1-1/4"	0.110"	0.220"	1-1/16"	1.062"	3/8"	Zinc-1	2000
S-MD 1/4-14x2 HWH #3	1-5/8"	0.110"	0.220"	1-9/16"	1.562"	3/8"	Zinc-1	1000
S-MD 12-14x3/4 HWH #3 Kwik-Seal	1/4"	0.110"	0.210"	1/8"	0.125"	5/16"	Kwik-Cote	3000
S-MD 12-14x1 HWH #3 Kwik-Seal	5/8"	0.110"	0.210"	3/8"	0.375"	5/16"	Kwik-Cote	2500
S-MD 12-14x1 1/4 HWH #3 Kwik-Seal	1"	0.110"	0.210"	5/8"	0.625"	5/16"	Kwik-Cote	2000
S-MD 12-14x1 1/2 HWH #3 Kwik-Seal	1-1/4"	0.110"	0.210"	7/8"	0.875"	5/16"	Kwik-Cote	2000
S-MD 12-14x2 HWH #3 Kwik-Seal	1-1/2"	0.110"	0.210"	1-3/8"	1.375"	5/16"	Kwik-Cote	1500
S-MD 1/4-14x1 HWH #3 Kwik-Seal	5/8"	0.110"	0.220"	3/8"	0.375"	3/8"	Kwik-Cote	2000
S-MD 1/4-14x1 1/2 HWH #3 Kwik-Seal	1"	0.110"	0.220"	7/8"	0.875"	3/8"	Kwik-Cote	1500

1 Refer to Figure in Section 3.6.1.5.

2 For coating abbreviations, Zinc-1 = ASTM F 1941, Kwik-Cote = Proprietary Coating, Section 3.6.2.2. For more information on corrosion resistance, reference Section 3.6.1.6.

**Warning:** Because of the potential for delayed hydrogen assisted stress corrosion cracking, many hardened steel fasteners are not recommended for use with dissimilar metals or chemically treated wood when moisture may be present or in corrosive environments. For further information, contact Hilti Technical Support at 1-877-749-6337.

## 3.6.2 Self-Drilling Screws

### Single Self-Drilling Screws – Heavy Gauge Metal Applications

Description	Thread Length	Drilling Capacity		Maximum Total Thickness (MT) <sup>1</sup>		Recess	Coating <sup>2</sup>	Box Qty
		Min	Max					
S-MD 12-24x7/8 HWH #4	1/2"	0.175"	0.250"	3/8"	0.375"	5/16"	Zinc-1	4500
S-MD 12-24x1 1/4 HWH #4	3/4"	0.175"	0.250"	5/8"	0.625"	5/16"	Zinc-1	3500
S-MD 12-24x1 1/4 HWH #5	1/2"	0.250"	0.500"	7/16"	0.437"	5/16"	Zinc-1	4000
S-MD 12-24x1 1/4 HWH #5 Kwik-Cote	1/2"	0.250"	0.500"	5/16"	0.313"	5/16"	KwikCote	4000
S-MD 12-24x2 HWH #5 Kwik-Cote	1-1/4"	0.250"	0.500"	1-3/16"	1.187"	5/16"	KwikCote	2000
S-MD 12-24x3 HWH #5 Kwik-Cote	2-1/4"	0.250"	0.500"	2-3/16"	2.187"	5/16"	KwikCote	1000
S-MD 12-24x1 1/4 HWH #5 Kwik-Cote Bond Washer	1/2"	0.250"	0.500"	5/16"	0.313"	5/16"	KwikCote	2500

1 Refer to Figure in Section 3.6.1.5.

2 For coating abbreviations, Zinc-1 = ASTM F 1941; Kwik Cote = Proprietary Coating, Section 3.6.2.2. For more information on corrosion resistance, reference Section 3.6.1.6.

### Single Self-Drilling Screws – Heavy Gauge Metal Applications

Description	Thread Length	Drilling Capacity		Maximum Total Thickness (MT) <sup>1</sup>		Recess	Coating <sup>2</sup>	Box Qty
		Min	Max					
Wood Drill Screws								
Decking Screws (Plywood to Framing)								
S-WD 8-18x1 5/16 PFH #3	1/2"	0.050"	0.140"	1/2"	0.500"	PHL #2	BP	6000
S-WD 8-18x1 15/16 PFH #3	5/8"	0.050"	0.140"	3/4"	0.750"	PHL #2	BP	4000
S-WD 10-24x1 PWH #3	3/4"	0.050"	0.175"	5/8"	0.625"	PHL #2	Zinc-1	6000
S-WD 10-24x1 1/4 PWH #3	1"	0.050"	0.175"	7/8"	0.875"	PHL #2	Zinc-1	5000
S-WD 10-24x1 1/2PWH #3	1-1/4"	0.050"	0.175"	1-1/8"	1.125"	PHL #2	Zinc-1	3500
Winged Reamer Wood Drill Screws								
S-WW 10-24x1 7/16 PWH #3 wings	1"	0.050"	0.175"	3/4"	0.750"	PHL #2	Zinc-1	4000
S-WW 12-24x2 PFH #4 wings	1-3/8"	0.050"	0.232"	1-1/4"	1.250"	PHL #2	Zinc-1	2000
S-WW 12-24x2 1/2 PFH #4 wings	2"	0.050"	0.232"	1-3/4"	1.750"	PHL #2	Zinc-1	1500
S-WW 14-20x2 3/4 PFH #4 wings	2-1/4"	0.050"	0.250"	2"	2.000"	PHL #2	Zinc-1	1000

1 Refer to Figure in Section 3.6.1.5.

2 For coating abbreviations, Zinc-1 = ASTM F 1941; BP = Black Phosphate. For more information on corrosion resistance, reference Section 3.6.1.6.

**Warning:** Because of the potential for delayed hydrogen assisted stress corrosion cracking, many hardened steel fasteners are not recommended for use with dissimilar metals or chemically treated wood when moisture may be present or in corrosive environments. For further information, contact Hilti Technical Support at 1-877-749-6337.

## Self-Drilling Screws 3.6.2

### Drywall Applications (Drywall to steel, framing and lathing screws)

Description	Coating <sup>1</sup>	Box Qty	Application
6 x 1 PBH SD	BP	10,000	Fastening Drywall, plywood, insulation, etc. to metal studs from 14 ga to 20 ga
6 x 1 PBH SD Zinc	Zinc-2	10,000	
6 x 1-1/8 PBH SD	BP	10,000	
6 x 1-1/8 PBH SD Zinc	Zinc-2	10,000	
6 x 1-1/4 PBH SD	BP	8,000	
6 x 1-1/4 PBH SD Zinc	Zinc-2	8,000	
6 x 1-5/8 PBH SD	BP	5,000	
6 x 1-5/8 PBH SD Zinc	Zinc-2	5,000	
6 x 1-7/8 PBH SD	BP	4,000	
6 x 1-7/8 PBH SD Zinc	Zinc-2	4,000	
8 x 2-3/8 PBH SD	BP	2,500	
8 x 2-3/8 PBH SD Zinc	Zinc-2	2,500	
8 x 2-5/8 PBH SD	BP	1,600	
8 x 2-5/8 PBH SD Zinc	Zinc-2	1,600	
8 x 3 PBH SD	BP	1,400	
8 x 3 PBH SD Zinc	Zinc-2	1,400	
7 x 7/16 PPFH SD Framer	BP	10,000	Fastening stud to track from 14 ga to 20 ga
7 x 7/16 PPFH SD Framer Zinc	Zinc-2	10,000	
8 x 1/2 PPH SD Framer Zinc	Zinc-2	10,000	
10 x 5/8 PPCH SD Framer	Zinc-1	7,500	
10 x 3/4 PPTH SD Framer Zinc	Zinc-1	7,500	
10 x 3/4 PTH SD Framer Zinc	Zinc-2	5,000	
8 x 1/2 PTH SD Lathing Zinc	Zinc-2	10,000	Fastening wire lath to 14 ga to 20 ga
8 x 3/4 PTH SD Lathing Zinc	Zinc-2	10,000	
8 x 1 PTH SD Lathing Zinc	Zinc-2	8,000	
8 x 1-1/4 PTH SD Lathing Zinc	Zinc-2	8,000	
6 x 1-5/8 SFH SD	BP	5,000	Fastening wood trim and base to 14 ga to 20 ga studs
6 x 2-1/4 SFH SD Zinc	Zinc-2	3,000	

1 For coating abbreviations, Zinc-1 = ASTM F 1941; Zinc-2 = EN /ISO 4042 A3F; BP = Black Phosphate. For more information on corrosion resistance, reference Section 3.6.1.6.

#### The importance of IBC 2006 / 2009 compliant screws.

ICC-ES ESR-2196 provides IBC 2006 / 2009 recognition of Hilti's Self-Drilling Screw Fasteners. This recognition was based on a comprehensive and rigorous independent evaluation of Hilti's Self-Drilling Screw Fasteners to the latest IBC code requirements in ICC-ES AC118 Acceptance Criteria for Self-Tapping Screw Fasteners, as well as the AISI S904 and AISI S905 test standards.

AC118 provides the IBC code recognition and quality assurance for screw fasteners. ESR-2196 recognizes many types of Hilti screws for the most common applications including CFS connections, gypsum to CFS, etc. Specifically, ESR-2196 covers the HWH, PPH, PBH, PWH, PPCH, PFUCH and PPTH head style Hilti screws.

To ensure IBC 2006 / 2009 compliance of screws on your next project, reference ESR-2196.

